

**[2010] [SAT0355] EFFECT OF STRONTIUM RANELATE ON SERUM OSTEOPROTEGERIN IN WOMEN WITH POSTMENOPAUSAL OSTEOPOROSIS TREATED OVER THREE YEARS**

**J. Collette<sup>1</sup>, O. Bruyere<sup>2</sup>, M. Vanoverberghe<sup>2</sup>, J.-Y. Reginster<sup>2</sup>** <sup>1</sup>*Service Chimie Médicale;* <sup>2</sup>*Department of Public Health, University of Liège, SART TILMAN, Belgium*

**Background:** Previous preclinical findings reported that Strontium ranelate increases the secretion of osteoprotegerin (OPG) protein as well as mRNA levels and down-regulates both RANKL protein and mRNA expression in primary human osteoblasts; this increase in the OPG/RANKL ratio is known to negatively affect osteoclastogenesis.

**Objectives:** The objective of the present study is to assess the effect of strontium ranelate on serum OPG in women with postmenopausal osteoporosis.

**Methods:** OPG was measured (ELISA, Immundiagnostik, Germany) in 2682 patients from the TROPOS study (randomised placebo-controlled trial that assessed the anti-fracture efficacy of strontium ranelate in postmenopausal women with osteoporosis) who had available blood samples at baseline and after 3, 6, 12, 24 and 36 months. Differences over time in biochemical markers level between the strontium ranelate group and the placebo group were assessed by analysis of variance with baseline biochemical marker level as covariate.

**Results:** Mean (SD) age of the study population was 76.7 (5.0) years with a body mass index of 25.5 (4.0). Median (min-max) baseline value of OPG was 5.15 (1.36 – 18.99) pmol/L. At baseline, no significant differences were observed between the strontium ranelate group and the placebo group for demographic characteristics and biochemical markers levels. At the third month of therapy, the serum concentration of OPG was higher in the strontium ranelate group than in the placebo group, with a mean (SD) 0.15 (0.03) pmol/L (2.6%) difference between groups ( $p < 0.001$ ), and this difference persisted at each evaluation during the three years (all  $p < 0.001$ ). After 3 years, a mean (SD) 0.24 (0.05) pmol/L (3.7%) difference between the two groups ( $p < 0.001$ ) was observed. The levels of OPG observed in this study remain in normal ranges.

**Conclusion:** These results are consistent with the involvement of the OPG/RANKL system in the decrease in osteoclast differentiation induced by strontium ranelate in post-menopausal osteoporotic women.

**References:**

- Brennan TC, Rybchyn MS, Green W, Atwa S, Conigrave AD, Mason RS. Osteoblasts play key roles in the mechanisms of action of strontium ranelate *British Journal of Pharmacology* 2009;157(7):1291-1300.
- Reginster JY, Seeman E, De Vernejoul MC, Adami S, Compston J, Phenekos C, Devogelaer JP, Diaz-Curiel M, Sawicki A, Goemaere S, Sorensen OH, Felsenberg D, Meunier PJ. Strontium ranelate reduces the risk of nonvertebral fractures in post-menopausal women with osteoporosis: TROPOS Study. *JCEM* 2005;90 (5):2816-2822.

**Disclosure of Interest:** J. COLLETTE Grant/Research Support from: Centralized analyses, O. BRUYERE Consultant for: Scientific advise, M. VANOVERBERGHE: None Declared, J.-Y. REGINSTER Consultant for: Scientific advise

**Citation:** Ann Rheum Dis 2010;69(Suppl3):602

**Osteoporosis**

[Close Window](#)